REMARKS

Accompanying this response, please find marked-up paragraphs of the specification which overcome some informalities noted in the specification. The undersigned avers that the enclosed replacement paragraph(s) of the specification do not contain any new matter.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

[001] FINAL DRIVE FOR DRIVING A VEHICLE WHEEL

~~[002] FIELD OF THE INVENTION~~

~~[003] The invention relates to a final drive of a vehicle wheel according to the kind defined in detail in claim 1.~~

~~[004] BACKGROUND OF THE INVENTION~~

[005] Final drives for driving a vehicle wheel are mainly used in low-platform buses where each driven wheel of the vehicle has its own drive motor. To obtain a sufficient rear width it is needed to keep as low as possible the axial expansion of the final drive.

[006] In DE 197 09 570 A1 has been disclosed an electric single final drive having several motors in which several motors are not disposed coaxially to the wheel axle and via a first reduction gear drive a second reduction gear, the output of which acts upon the drive wheel. Between the first reduction step and the second reduction step a wheel bearing is situated the same as a brake disk which is located additionally within the extension of the wheel rim of a twin-tire drive wheel. By both reduction gears being disposed separate from each other by the wheel bearing thereoccurs, chiefly in helical-cut toothed wheels due to the displacement action of the reduction gear, a shift of the oil level which disadvantageously acts upon the lubrication of a reduction step. In order compactly to design the final drive in its axial extension and make it possible to prepare the required torque, several electrical drive motors have to be used.

[007] The problem on which this invention is based is to provide a final drive for driving a vehicle wheel which is compactly designed in axial extension and in which the brake is situated in a wheel rim, only one drive motor is used for each final drive, the reduction gear is sufficiently lubricated and that stands out by a good degree of efficiency.

[008] ~~The problem is solved with a final drive according to the preamble of the main claim and also including the features thereof.~~

[009] SUMMARY OF THE INVENTION

[010] According to the invention the final drive can be decelerated via a brake located within the axial extension of a wheel rim, it being possible that the wheel rim be also a rim for a single tire and in which the brake is placed between the drive motor and the reduction steps. By the reduction steps being disposed directly adjacent, all the moved parts of the toothing can be lubricated by one lubricant which is located within a common space where the reduction steps are placed. Hereby a uniform temperature level results which by virtue of the arrangement of the reduction gear upon the wheel outer side can satisfactorily radiate heat to the environment. The drive motor is not situated coaxially to the wheel axle whereby between wheel rim and drive motor an installation space results where can be placed the brake and the actuation mechanism thereof. The wheel bearing is preferably disposed for absorbing the wheel forces radially above the first reductio gear so that the axial installation space needed b the wheel bearing is available to the drive motor. Thereby the drive motor can be designed with a maximum active length preferably similar or equal to the diameter of the air gap without the total length of the final drive being enlarged thus increasing the degree of efficiency of the drive motor. By the wheel bearing being situated in radial direction outside the first reduction step but being located in the radial extension area of the first reduction step, it is possible to connect the wheel hub, one part of the second reduction step and the bearing flange with the wheel bearing to form a compact unit which also has not to be separated even when disassembling the wheel drive whereby during an assembly in case of servicing the wheel bearing has not to be adjusted again. The second reduction step is preferably designed as planetary gear wherein the planet carrier of the planetary gear forms the output, the ring gear is connected with the hub carrier which carries the wheel bearing and the inner central wheel forms the input. But it is also possible to design the ring gear as output. The inner central wheel is driven by the first reduction step which is preferably designed so that the ring gear forms the output, an input pinion forms the input, which is in intermeshing connection with the ring gear and at least two intermediate wheels, and the carrier which holds the intermediate wheel in

stands out by a compact construction, where a drive motor with optimum degree of efficiency can be used and the reduction steps are sufficiently lubricated.

~~[012]~~

~~[013] Other features are to be understood from the description of he figures which show~~

[012] BRIEF DESCRIPTION OF THE DRAWINGS

[013] The invention will now be described, by way of example, with reference to the accompanying drawings in which:

[014] Fig. 1 is a final drive for driving a vehicle with double-shear planet carrier; and

[015] Fig. 2 is a final drive for driving a vehicle with double-shear planet carrier.

~~[016] DETAILED DESCRIPTION OF THE INVENTION~~

[017] The drive motor 1 not coaxially situated relative to the wheel axle is preferably an electric drive motor but may also be a hydraulic or pneumatic drive motor and it drives an input shaft 2 preferably passed into the housing 4 of the drive motor 1 of a first reduction step 3. The housing 4 of the drive motor is preferably cooled by water and is connected with a hub carrier 5 via connecting elements. The mounting pad 6 of the drive motor 1 on the hub carrier 5 is located in the area of a load active line 7 where the wheel forces act upon the final drive. By the mounting pad 6 being situated in the area of the active load line 7, so that none or only small torque loads generated by the vehicle weight act upon the elements which connect the hub carrier 5 with the housing 4 of the drive motor 1. The mounting pad 6 can thus be made small in its radial extension, it being possible upon this diameter to place a sealing element 8 between a wheel hub 9 rotating at the rotational speed of the wheel and the hub carrier 5. Since the radial extension of the mounting pad 6 is small the peripheral velocity of the sealing element 8 is also small, which advantageously acts upon the service life of the sealing element 8. The wheel hub 9 is connected with the planet carrier 10 which forms the output of a second reduction gear 11 and with a wheel rim 12. A wheel